

JACG

April 1987

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THE JERSEY ATARI COMPUTER GROUP

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EDITORIAL

Please note Mary Russomano's article on page 7. Congratulations are in store for David Favin, first winner of THE FRANK PAZEL AWARD. I think that we all can take pride in both the thought behind the award, and the award itself. It is heartening to see such a fine member of the computing community as David!

As you peruse the Newsletter this month, I hope you notice a more representative balance in 8-Bit vs ST coverage. This can continue providing the article contributions keep coming my way. Thanks to ALL contributors!!!



D.B. Marks

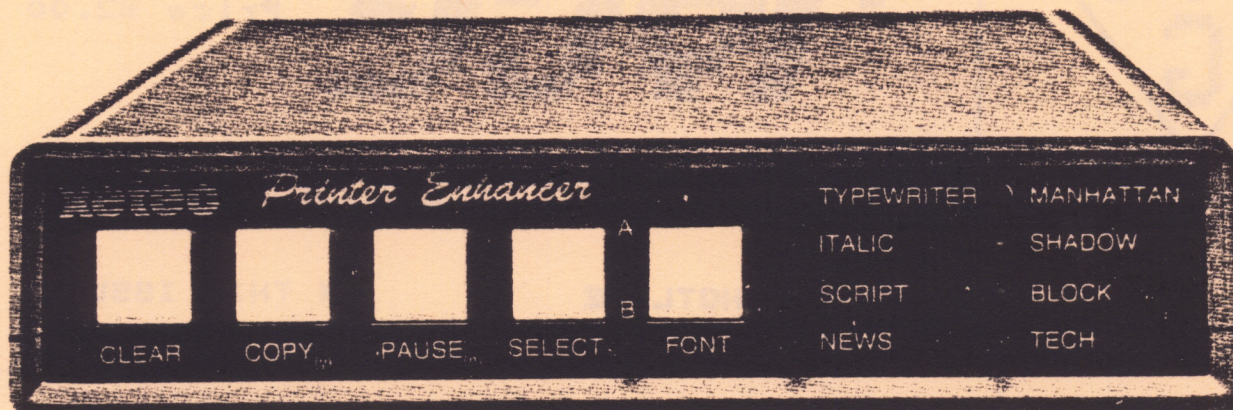
MARK YOUR CALENDAR !!
JACG
Meeting Schedule

May 9, 1987

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PRESIDENT'S CORNER

Tom Pazel - JACS

Welcome to my first President's Corner. Being the president of the JACS is the first time I've ever been "in charge" of ANY organization, so please bear with me. I intend to do the best I can and hope to be able to carry on in the tradition of my predecessors. Fortunately, I've got a tremendous bunch of Executive Officers to help me along.

Speaking of officers, congratulations to our newest! Doug Van Hook has taken over the reigns as 8-bit Vice President and Tom Shoosmith is now our 16-bit Vice President. These guys deserve a lot of credit for stepping forward when the need arose. Thanks, guys!!

I must express my appreciation to Dave Moyes for putting together the newsletter every month, especially lately. As you can see from the Treasurer's report (elsewhere in this issue), our financial situation has MUCH improved over the past few months. However, when funds were low, Dave was still able to find a way to give us a very acceptable looking (in both quantity and quality) newsletter. Thanks, Dave, for all of your help.

This column is beginning to sound like a "Thank You" note, but I must do one more. The February and March meetings each did tremendously in terms of disk library sales. I'm not going to give exact figures, but I feel that they contributed significantly towards getting us back on more solid financial ground. I have no one to thank for this but all of you who supported the library and bought disks from it. As Joe Kennedy remarked in a recent column, Sam Cory and associates spend one heck of a lot of time with the disk library and it shows. Thanks to Sam, Charlie, Brett, Dave and all of you, maybe this group will last a while longer.

Finally, a little business. The Executive Committee just recently approved the purchase of a hard disk for the BBS. This will certainly enhance the entire Bulletin Board and should enable us to have TONS of messages and downloads available before too long. I want to encourage the use and growth of the BBS. I wanna see things on there from JACGers! It's one of the many benefits you've got as a member, so take advantage of it! Let's see it grow and prosper. It won't, if you don't make it happen.

We will be presenting the first Frank Pazel Award at the April meeting. David Savin is the recipient this year and, I might add, it is well deserved. You can read more about David elsewhere in this issue. I am happy to report that he will be at the meeting to accept the award in person. Congratulations, David!

We need people to demonstrate stuff at the meetings and to write things for the newsletter. Come on, folks, give it a go! See Doug Van Hook (for 8-bit) or Tom Shoosmith

(for 16-bit) presentations. Keep those articles flowin' in to Dave. At the risk of repeating others - GIVE A BIT!

Until next time, happy computing!

Print Shop Utilities

Tom Pazel - JACS

If you purchased the Print Shop Utilities program I wrote last year and you have a Gemini printer, you've probably discovered that the EPSON version of the program does not work correctly on your printer. The following fixes to the program should cure the problems. These fixes are from an ACE newsletter article written by Dick Pederson.

From BASIC, LOAD the program PSG.LEPS that's on your Print Shop Utilities disk. LIST line 600. This line is supposed to turn on the elite font (12 CPI). Change this line to read as follows:

```
600 PUT #1,27:PUT #1,66:PUT #1,2:REM SET PRINTER TO 12 CPI
```

To print your listing of icon names in "double strike" mode, type in the following new line:

```
605 PUT #1,27:PUT #1,71:REM SET DOUBLE STRIKE MODE
```

Line 690 is designed to return the printer to its original pica (10 CPI) mode. Change this line to read as follows:

```
690 PUT #1,155:PUT #1,27:PUT #1,66:PUT #1,1:PUT #1,27:PUT #1,72
```

Line 1080 sets line spacing on the printer for the icon printing option. You have probably noticed that, unchanged, the program prints icons with the image split by blank spaces as if an extra carriage return has occurred. Actually, the problem is in the setting of an incorrect line spacing. Change line 1080 as follows for a perfect icon:

```
1080 PUT #1,27:PUT #1,51:PUT #1,16:REM 16/144 INCH LINE SPACING
```

That's it for the changes. Now SAVE the changed program as PSG.LEPS on the disk it was LOADED from.

To really fix everything, LOAD the program PSMENU from BASIC. LIST line 170 and change the word "EPSON" to "GEMINI". Next, LIST line 290 and make the same change. However, for this second change you must be in inverse lower case character mode. SAVE the program to PSMENU. These changes alter the printer selection menu screen to list Gemini and Prowriter.

Finished! You're all set. Happy computing!

Doug Van Hook - JACS

Paul Machiaverna - JACS

Sound is generated in the Atari computer by the Pokey Chip, which also handles the serial I/O bus and the keyboard. There are four independently controlled sound channels, all able to play simultaneously. Novice programmers can experiment with sound, but the attack and decay of each note must be expertly handled to duplicate the sound of a specific musical instrument. The timing requirements for programming four independent voices have fostered the development of music composer software.

The Advanced Music System was released by APX in March of 1982. It was one of the first composers available, and became the standard for Atari users who wanted to write or arrange musical scores. Between 1982 and 1985 many Atari users entered music into the public domain. To encourage this, author Lee Actor authorized a public domain version of the Advanced Music System which could play, but would not create new music.

Music composer programs can now be connected through MIDI interfaces directly to keyboards. By configuring the keyboard as an input or output device music can be retrieved and stored. So why bother with an AMS Music System Player without these capabilities?

The AMS Player, which is our disk for this month, has an almost hypnotic effect on the Atari viewer. The keyboard shows each note by changing the color of the key. One color represents each of the four voices. The tempo can be adjusted by using a pair of paddle controllers. The controller in the first joystick port is used to fine tune the tempo while the second paddle is for large adjustments.

This player allows you to copy any old AMS files to the new disk, and play them sequentially like a record player. Who knows, it could motivate you to learn how to read music. Regardless, this player is a showpiece for the Atari's versatile Pokey Chip.

TREASURER'S REPORT
MARCH 1987

S. Vandenberg - Treasurer - JACS

STARTING BALANCE 3/1/87 \$2034.92

INCOME	\$2147.50
Expenses	\$ 668.68

ENDING BALANCE 3/31/87 \$3513.74

The Graphic Artist is a combination software product developed by Progressive Computer Applications (PCA) which lies in a category called 'Graphic Arts Software', as quoted from the manual. Instead of being an integrated package which is several programs lumped together, the Graphic Artist puts a lot of features together to make it useful completely on its own. It is written exclusively for the Atari ST computers, and will run on any 520 or 1040. So, what is the Graphic Artist? It is a package consisting of CAD, business graphs and Desktop Publishing. It is the first professional quality CAD program to hit the Atari ST market. It has been on the market for a little over a year, but I have never heard much talk about it. It seems that no one really knows what exactly the Graphic Artist is or what it can do for you. Well, I have told what it is, and let me tell you that it does plenty! First, though, let's clear up what exactly CAD and Desktop Publishing are and how they are used.

CAD is an acronym for Computer Aided Design. This is the ability to use a computer as a tool which replaces the drafting table and all the accessories needed for creating drawings of floor plans, mechanical assemblies, electronic schematics, wiring diagrams, and any other conceivable designs. What makes CAD very different from other drawing programs, such as DEGAS and NEOchrome, is the powerful commands available to the user for drawing and editing designs. The emphasis in CAD is not the quality of the screen drawing, but the high quality and detail of the printed design. More about that later. The CAD stores the entire drawing in a spreadsheet like those used in VIP Professional and other similar products. This allows for easy editing of a design. For example, you all must know how tedious it can be to delete a segment of a drawing in DEGAS which has many overlapping lines. You must use the mouse to carefully erase each segment, while trying hard not to erase what you want to keep. This is not the case in CAD. You simply delete what you don't want from the spreadsheet and let the computer redraw the edited design. CAD will automatically fill in all the gaps where the deleted shapes were and connect the lines of the existing shapes. In a CAD environment, every thing is drawn to scale. That is, you don't use screen coordinates for drawing. Instead, you scale the screen in units, such as a standard 8.5" by 11" page and you express each shape in terms of it's actual size. This is exactly what you see on floor plans and machine design drawings. All standard shapes are easily drawn using the circle, rectangle, arc, and polygon functions. Six line styles are available, which include solid, dashed, dotted, etc. These are needed for creating designs which include centering and

hidden lines. There are ten fill patterns useful for showing different surface types as in building designs. You are also given the ability to draw a total of 256 layers of a single design. For instance, you can have a drawing of the exterior of a house on the first layer. Then you can remove the first layer to show the construction of the outside wall. You can repeat this process over again to show a view of a room inside the building. This is a primary use of layers; the ability to remove an outside view to reveal what is underneath.

One of the most powerful features of CAD is the ability to create symbols. Symbols are segments of a full page drawing which are complete designs themselves. For example, the logo of the JACS could be defined as a symbol which can be stamped onto any drawing or text page, as in the newsletter. But, it doesn't stop there. Symbols can be scaled to any size and rotated to any whole degree. This allows maximum flexibility for any design. You can keep a whole library of symbols on a data disk and retrieve them as needed. For those of you who like to design electronic circuits, there is a library disk available which includes all the standard electronic symbols needed for creating schematics of professional quality. And what makes it so easy to use is the fact that you don't have to draw each and every component. You simply retrieve the symbol from the disk (such as a resistor), scale it to the desired size, rotate it and place it anywhere on the drawing. Now that's easy! The business graphs function of the Graphic Artist is defined as another type of symbol. Yes, that means that you create the graph and make it any size you want. This also means that you can place your graph anywhere on a letter or form. Plus, you can add as much text as you want to fully clarify the graph. Try to do that with any spreadsheet program. Forget it!

Now we come to the Desktop Publishing features. Desktop Publishing is the creation of a printed page, as in a newsletter. You place text anywhere on the page with complete control over the scale, rotation, font style and format. The Graphic Artist allows very powerful manipulation of text. You are supplied with eight font styles. You can use formatted or unformatted text on a page. If you choose formatted, the Graphic Artist behaves much like a full-blown wordprocessor with the exception that you see only a couple of lines of text at a time at the bottom of the screen as you type. The reason for this is that you perform all your typing and editing before you actually place the text on the page. You defined exactly where and how much space the text should take up on the page. This allows for easy combinations of text and graphics. The editor is NOT meant to replace a wordprocessing dedicated program and should NOT be used as such. The reasons being; A) You can only work on one page at a time. You cannot type a document and have the editor split it up into pages. B) The printer drivers of the Graphic Artist place the printer into graphics mode, and we all know that graphics take much longer to print than

standard text printing. But, for creating a single page containing many font styles, formats, and sizes all mixed with graphic symbols, the Graphic Artist can't be beat. The unformatted text is used for quick additions of text on the screen. You don't have all the features of formatted text, but you still can scale and rotate unformatted text.

Finally, we come to the printing options. There are several print drivers on the supplied disks for dot-matrix printers (Epson and compatibles only), Laser Jet Printers, and Plotters (Hewlett Packard and compatibles). Although the best print device to use the Laser Jet, the results on the Epson FX-85 (what I use) are nothing short of incredible. Never has there been a driver which has been able to get such great looking graphics hardcopies. Diagonal lines have minimal jaggedness and circles look like real circles and not like a bunch of straight lines resembling a circle. There are several drivers for each print device so you can choose from a quick rough draft to a high quality final printout. Also, to meet industry standards, the Laser Jet and Plotter drivers direct output to the serial port of the Atari ST.

Overall, the Graphic Artist is a very useful and powerful software package. But, like all programs, the Graphic Artist does have a few peculiarities. One lacking feature of most importance is the use of the UNDO key for removing the last data placed on the drawing. This is very frustrating when filling an area and the famous 'leak' occurs and fills the entire screen. You have to edit the spreadsheet and REDRAW the design. The same holds true when you accidentally push the mouse button at the wrong time when drawing on the screen. However, you do get used to using the spreadsheet for erasing and editing designs. Another drawback is that you cannot change the scale of a fill pattern. You have to zoom in on an area, fill it, and then return to the whole page view. It would be much easier to simply change the scale and perform the fill. Finally, you can not remain in certain functions, such as plotting single points on a drawing, without having to choose the function again from the menu bar by hitting return. The right mouse button should act as a return key to avoid having to use the keyboard along with the mouse. For most functions the keyboard is used just as much as the mouse. I must note that the Graphic Artist is NOT GEM based. Instead it uses an ingenious menu bar at the bottom of the screen which you scroll through with the cursor keys. This may be considered a disadvantage to some users, but I welcome any opportunity to be unleashed from GEM for maximum flexibility of screen designs. You can use either the color or monochrome monitors. I have used the program on both, but using the monochrome monitor is much better. You are able to see your designs in much greater detail than on the color monitor. I mentioned before that the emphasis here is the printed result as opposed to the screen display. The Graphic Artist is not intended for creating DEGAS like pictures, which ARE intended for

viewing on the monitors. The printed design looks much better and shows the great detail you can squeeze out of your printing device.

Whew! I have discussed a lot about the Graphic Artist and this is only a fraction of what is available to the user. I have been using the program for about a year now and I find it as intriguing as Atari computers; everyday you learn about another incredible feature. The original price was \$500 back in January of 1986. Today, you can find it for as low as \$150. If you really want a professional package for creating CAD drawings or Desktop Publishing, the Graphic Artist is definitely the way to go. Also, Progressive Computer Applications is dedicated to providing extensive user support. I have called them several times with questions and they were more than happy to provide the answers. The latest versions, 1.50 and above, require that you have TOS in ROM. If you don't, I suggest you go out right now and have them installed! Getting an extra 200K of available memory out of your machine is very useful in all applications, as well as this one. One final note for anyone who purchases this software; the Graphic Artist is a very complex program and does require your getting used to using a CAD environment. Take the time and patience to read the manual and perform the step by step examples in it to grow accustomed to the extreme power available at your fingertips. Your efforts will pay off when you see your final hardcopy.

NEW TO THE ATARI?

NEED A LITTLE HELP?

PRESS CTRL-CLEAR

SYSTEM RESET TO REBOOT

**BOOT
ERROR...**

00000000

SET OPTIONS NOW

**MAYBE A JAGG
BIG BROTHER CAN HELP**

**GIVE US A CALL
201-468-6190**

ST REVIEW

Tom Shoosmith - JAGG

Universe II

Having recently completed Universe II, I thought it appropriate to review something I do best - play games! If you've played Universe for the 8-bit, chances are you'll enjoy Universe II for the ST. Universe II is a three disk game which can be played off any series of floppy drives, ram disk, or hard drive. The disk swapping is staggering with one floppy drive, improved with two and as I found late into the game - best off a hard drive. Disk A however, is copy protected and must be resident in drive A, even with a hard drive.

In this space travel yarn, you start out a free trader from Vromus Prime. Actually, trader is a cover for your spying activities on behalf of the Federated Worlds(good guys) against the United Democratic Planets(bad guys). As in Universe, the player may discard the role of trader to become a miner or pirate (in this case not a conduct violation). The tense relationship between the FW and UDP has you out of retirement to perform missions recieved on you Vidcomm (receives messages and assignments), as you slowly realize your goal through critical clues and materials.

Although a great deal of game time is spent trying to figure out what the heck you goal is, you spend much time hiring and training your crew, ferrying passengers back and forth between planets (for profit), buying goods on one planet and selling it on another (you won't find the profits here you found in Universe I), upgrading you ship or your ships parts, or pirating another ships cargo. The pirating phase of the game is the most productive, and the boarding and fighting sequence are an interesting part of the game.

My only complaints with Universe II (and its 100+ page manual) are that the Starport section (where you go to buy and sell goods, talk to other people interactively, train crew, transport passengers to/from, sell mined ore, etc) is that it is the only interactive text portion of the game and the vocabulary is very limited (far cry from Infocom) and can drive you crazy trying to find the right phrases. The going in and out of nested drop down menus is time consuming (especially with no hard drive), and the only menu short cut is not in the ST version and the tedious disk swapping with just one or two floppy drives.

However, for you sci-fi types, its pluses outweigh the minuses. Omnitrend supports it's registered users with a bulletin board for questions, answers, hints or just conversation with other users. Tom Carbone, founder of Omnitrend is more than happy to help you, if necessary. The game runs basically the same for the ST, IBM or Mac, so users can talk about the game, without wondering if

their playing the same game you are! The game has no one set path for ending, it can be completed with different approaches. Omnitrend figures it to be 70-80 hours of playing time, I figure that's an under estimate. Recently a new publication has emerged supporting Universe II, its called Vidcomm, and a subscription goes for \$12.95 per year. If interested you can contact me, I subscribe. Omnitrend continues to support the ST, and there next release, Breach, a small part of Universe II extracted and expanded, has generated alot of anticipation and excitement. All in all Universe is good playable game, with hours of enjoyment and I suspect Breach will too.

**DAVID FAVIN
WINS
FRANK PAZEL AWARD**

Mary P. Russomano - JACB

FRANK PAZEL was an active, dedicated member of the JACB. He served as Newsletter Editor for 3 years right up to his death last July. He consistently sought to upgrade the quality of that publication and the JACB. Graduating with a BA in Mechanical Engineering, Frank worked as a member of a Bell Labs team designing machinery to lay telephone cables, before moving into education in 1966 where he taught industrial arts and cooperative education in the Mountain Lakes, New Jersey school district. A self-taught computer buff, he became a computer teacher in the same district in 1984. Frank has assisted many JACB members with printers, networking, programs, and software. He inspired us with his persistence, enthusiasm and his zest for life. In his memory, an award has been established to recognize each year the person or group that has made an outstanding contribution in the field of computer science.

The 1986 FRANK PAZEL AWARD winner is DAVID L. FAVIN, an MTS (Member of the Technical Staff) in the Undersea Cable and Apparatus Design Department in Holmdel. David is recognized for his work in designing computer aids to help cerebral palsy victims to communicate. Cerebral Palsy is a condition caused by a lack of oxygen to the brain at the time of birth. Damage to human system ranges from clumsiness to very little motor control and occasionally, mental retardation. Favin became interested in helping children so afflicted, when he visited the Cerebral Palsy School and Treatment Center in Long Branch, N.J. At that time he saw a young girl who communicated her needs by pointing to "talk board" pictures (such as bathroom, food, water, etc.) with a pointer attached to her head. David thought that if she were his daughter, he would want to make the task easier and less demeaning. As a result he planned the first system that would allow a person to use a computer to select from a menu of items that would lead to other menus and more refined choices. A son of a friend wrote the first program for an expensive computer. David has since adapted and enhanced this program so that more inexpensive computers could be utilized. ►

The cursor was activated by a switch near the young girl's heel. The heel was the part of the body over which she had the most control. Choices on the menus included categories such as food, people, verbs and places, as well as words. The program gave her the opportunity to create sentences.

The same apparatus was adapted for Bill, a 40 year old man who could not read and had limited movement of his head. In his case an inexpensive computer was equipped with an ear plug and a voice synthesizer that "read" the categories into his ear plug. Stop...social...food...feeling....Bill made his cursor selection by hitting a switch with his cheek. The next menu refines the word "feel." Hot...cold...hunger...wet....When the choice is narrowed down to the final item, a speaker announces, "I am wet; please change me." The computers are donated to the people who use them by the Jewett Chapter Pioneers.

David is extremely pleased to receive the FRANK PAZEL AWARD. It gives him an opportunity to encourage other computer sophisticates to use their knowledge to help the less fortunate. He is grateful for the award, however, he explained that there is no greater reward or words to describe the feeling he receives when he has successfully devised a new tool to improve the quality of life for a specific handicapped child. All of his programs and equipment may be adapted for different types of handicaps.

There is always a new project underway at the Favin residence at 221 Queens Drive South, Little Silver, New Jersey. David has written programs with a visual cursor; an audible cursor; programs that teach blind children to type; programs that teach children to tell time or to identify the parts of the face; programs to recognize colors; geometric figures; spatial concepts and another to recognize the alphabet. He has developed an electronic talk board and used the Votrax synthesizer for unvoiced individuals. He has developed programs to retrain the memory of aphasia victims.

David would like to encourage Atari users to participate in this worthwhile endeavor by donating their talents or unused computers to his group of AT&T programmers. If you wish to donate time or equipment (tax deductible), please call or write David. (201-741-6439)

The award features a torch of knowledge with the following inscription: The 1986 FRANK PAZEL AWARD FOR OUTSTANDING CONTRIBUTIONS IN THE FIELD OF COMPUTER SCIENCE IS PRESENTED BY THE JACB TO DAVID FAVIN. It was generously designed by RYCO (Gifts, Awards, Engravings, Advertising Specialties), 528 Springfield Avenue, Berkeley Heights, N.J., 201-464-9288.

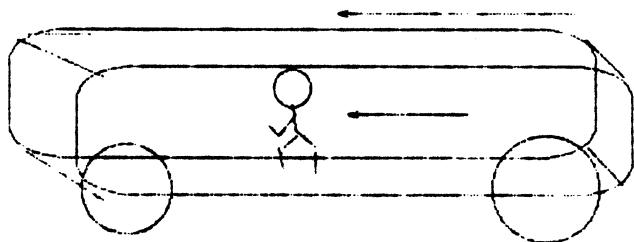
USING THE ATARI TO SOLVE THE EQUATIONS OF RELATIVITY

By ERIC JACOVES

The ATARI 800 computer is a general purpose machine and can be used for much more than games. One of the more famous equations dealing with Space and Time were created by H. A. Lorentz some 50 years before EINSTEIN developed his theory of Relativity. Lorentz did not create the equations from any theory, rather he back calculated them from empirical data dealing with Electromagnetic observable properties. Lorentz did not consider that his equations had any significance in the real world.

Einstein on the other hand used the equations to describe the actual conditions that would occur in the real world under the conditions of motion or more correctly in a moving frame of reference such as a car or a spaceship.

We can understand the problem that faced the scientists in the early part of the 20th century by looking at this simple analysis of motion in a moving train.



The train is moving in the direction of the arrow and the man in the train walks in the direction of the trains motion. The man therefore is moving at a velocity equal to his walking speed plus the speed of the train. If he walks backwards then he is moving at a velocity of the train minus his walking speed or in the language of mathematics in the first case the mans velocity $V = T + W$

where T = the trains speed and

W = The mans walking speed

In the second case the mans velocity

$$V = T - W$$

If you are on top of the locomotive and throw a ball forward the ball will have an initial speed of the trains speed + the speed that you can throw a ball. If on the other hand are at the tail of the train and throw the ball backwards then

the ball will have a forward speed equal to the trains speed minus your throwing speed and if the train is traveling fast enough the ball will actually travel toward you rather than away from you as seen by an observer on the embankment. Einstein knew that the speed of Light did not follow this rule as the experiments to detect the motion of the earth in the aether could never be found as light had the same speed no matter which way we looked. This was a severe problem for Physics until Einstein said that TIME itself must vary for only the speed of light is constant.

The equation of Time Dilation is

$$T' = \frac{T - \frac{V}{c^2} X}{\sqrt{1 - \frac{V^2}{c^2}}}$$

T - time
 V - velocity
 X - 1

We can solve this equation using ATARI basic in a small program such as...

```

5 c = 300000
10 for V = 200000 to 300000 step 5000
20 T = 1 - V/c*c/(sqr(1 - V*V/(c*c)))
30 print T;next V
    
```

This program will print out the duration of one second at relativistic speeds approaching the speed of light. We will discover that at 299,999 Km per second 5 days on the spacecraft is equal to 1 year on earth. If a Star Trek 5 year voyage were undertaken, leaving earth on Feb 20, 1987 the spaceship would return to earth on Feb 20 1992 according to its own clock. But as far as the Earth were was concerned the spacecraft came home on Feb 25, 1992, 12,451 and that was one hell of a five year voyage.

10 ? " INPUT ARTICLE "

K. Granison - JACS

The purpose of this article is to reach that segment of our membership that for whatever reason may feel intimidated to participate in the functioning of our club by either writing an article or demonstrating new software because they have not been a member of the JACS since the abacus board died or LOTUS meant more than a flower.

Being a "hacker" myself, it is easy to see where the intimidation comes from. If you say "JACSS" several times, it takes on the meaning of JOX or JOCKS, ie., some terminology that references people that are so proficient in the sports world that unless you too are so athletically inclined---Beware!...Be Where?...Certainly, not on the athletic field!...And as the connotation applies here...Certainly not on the Computer!!!!

Somehow when one thinks of the Jersey Atari Computer Group I think at least the same conclusion can be drawn, ie., unless you can write programs that take two minutes or more to LIST or have 100-200 Peek and Poke statements, just sit back and let the REAL JOX or JACSS show you how it is done.

Mistake!....Mistake!.....Mistake....!

I firmly believe that the founders of this organization had a greater purpose in mind than that of being a self serving monopoly. There is no way that I can question the brilliance of those that formed this Users Group; I believe that we all owe them a great deal of gratitude. However, I also believe that the "Braintrusts" foresaw that the PC (particularly the Atari Home/Personal Computer) was a revolution unto the common man and wanted to be involved in its introduction into everyday life. I can only surmise that they understood and hoped that the common man/woman would use this innovation to make their own "station" in life that much more productive.

Yes, a form of true altruism!!

I am not trying to say that you should not aspire to greatness. I think that by your mere membership in this progressive organization you are making a statement that you think among the "elite". You want to be a cut above. You are not afraid of technology. You want to contribute to this new frontier. Remember, when the early Americans first ventured West, it did not start with the Gold Rush of '49. There were a few unknown settlers on the plains.

Please venture to shape the direction of your club! If you are on a diet, then write a Calorie counting program for our library. If you are planning a vacation to a specific locale, create a program that can assist someone in booking flights and/or hotels, etc. The key is

to be creative, not complex.

Such innovations will keep our club alive and on the growing path. Hopefully, we will continue to attract new members of diverse backgrounds and various levels of programming prowess. Let's join together and share our skills and nonskills. Who knows...we may re-invent the wheel!

Whatever your programming fears. Whatever your software applications or misapplications. Please share them with us. In one way or another we as users all encounter the same predicaments and problems.

I challenge anyone to write me care of this newsletter. In lieu of "Dear Abby"...Please write "Dear Kevin"...I promise to respond to all questions and statements. Look forward to hearing from you!

From The Exchange

R. Mulhearn - JACS

CHARLOTTE AUG 2/87 SMART RAM DISK 8.2D,TURBO BASIC
MENU ROUTINES

ACE EUGENE 2/87 MULTI REVIEWS 8 AND 16 BIT

MID FLORDIA 3/87 DOUBLE COLUMN WITH AM+

AUSTIN ACE 2/87 HOTRODDING THE 8 BIT

ST EXCHANGE 2/87 ST NON DOCUMENTED TRICKS AND TIPS

ASTUN 2/87 X MODEM YMODEM PROTOCOL REFERENCE

BETWEEN BYTES 2/87 XE/XL POWER SUPPLIES EXPLORED

KC NACE 2/87 PR CONNECTION BLUES,AM+ IN DOUBLE
DENSITY

NICH.ATARI MAG 3/87 800 EMULATOR FOT THE ST,1050
DRIVE FIX,XM 301 BUG=BIG TROUBLE,UPGRADES REVIEWED,1050
ZERO TRACK SENSOR REPAIR TO CORRECT BOOT ERRORS

SPACE PROBES 3/87 MIO BY ICD REVIEWED

NUGGET 2/87 TURBO BASIC UTILITY

DATA LINK 3/87 ST MONITOR SWITCH

PUGET SOUND 2/87 SM 124 MONITOR MOD,XL256K MEMORY
TEST

PAGE 6 3-4/87 LABEL PROGRAM FOR DISKS, TYPEING
TESTER, SOLID MODELING, DEGAS FADE PROGRAM, HARD DISKS FOR
ATARI

FEEDBACK 2-3/87 ST DEGAS LOCATION FINDER, PRINTER
DRIVER EP 1201

FACCS 3/87 ST 800 EMULATOR MIXED BY ATARI

ACE ST. LOUIS 3/87 BTL HARD DRIVE 8 BIT

FUJI FACTS 2/87 130XE/800XL BATTERY BACK UP

HOUSTON ACE 2/87 400/800 ALARM SYSTEM, SPARTA DOS
DISK ARCHITECTURE EXPLORED

NYBBLES & BYTES 2/87 AW+ RANDISK CONVERSION, ST DISK
TITLE SCREENS

CURRENT NOTES 3/87 GETTING STARTED WITH MAGIC
SAC, HABAWRITER II, EXPANDING ST MEMORY, ST RANDISK, VT52
EMULATOR

MILITARI 3/87 ATARI PC CLONE DELAYED OR
VAPORWARE?

THE WAND 3/87 COLDSTART YOUR XL/XE, WRITE PROTECT
BYPASS INDUS

J. A. C. G.
EXECUTIVE MEETING

R. Mulhearn - Secretary - JACG

The meeting was called to order by President Joe Kennedy. Present were J. Kennedy, T. Pazel, R. Mulhearn, D. Noyes, S. Cory and G. Gorski; a quorum was thus constituted.

The first item discussed was the February financial statement. It was proposed and passed without dissent that each month the bank statement will be resolved by the Treasurer. Also, prior to the 1st of the month, the Treasurer will deposit in the club account all checks and cash on hand. Further, to allow the treasurer to act, all club representatives will transmit any cash, checks, or expenses by the 20th of the month. Finally the Treasurer's report in the Newsletter will contain the following items:

Starting balance (previous month's ending balance)
Income received by the 1st
Expenses incurred before the 1st
Ending balance

The Treasurer will expand on the report as necessary at each meeting

It was proposed and passed that all direct club expenses incurred as a result of being Advertising Manager be reimbursed when documented and billed

February disk sales were discussed with income of approximately \$600; \$100 of which came from the ST Library. The need to expand the ST Library to be more of a benefit to members was also explored. It was decided to sell the Astra Double Drive at a price not less than the cost necessary to upgrade a library drive for duplication use. The possible sale of the library PD disks in retail outlets was discussed.

It was proposed and passed that BBS Sysop Mark Knutsen be reimbursed for the initial cost of joining PC Pursuit (to offset toll calls needed to maintain the BBS). All previous allotments remain unchanged.

The shortage of double sided drives for the ST was discussed, with the option of substituting a 20Meg HD for the double sided drive and cash, provided the drive has no compatibility problems with the BBS system; the substitution was so moved and voted.

The idea was discussed of creating a new member package on disk for the ST and 8-Bit users. Such a package to include but not be limited to the: Bylaws, BBS operation, Flea Market, Library (ST or 8-Bit index), Big Brother info and Officers - in Atariwriter format. Proposed that it be presented to the membership for further action.

Tom Pazel was elected President without dissent and accepted effective upon the resignation of the present President.

It was so moved and passed to present a free 1 year membership to the boy who went 1 year without TV except for his ATARI COMPUTER. Action to be taken by the Advertising Manager in conjunction with the Star-Ledger.

The President to check on the copyright and inclusion of Library disks. The letter by a member on the subject of the ST Library was discussed. It was discussed and agreed to pursue an Ad Exchange with the ATARI EXPLORER. It was proposed and passed that all commercial sales be identified and further that the commercial rules be enforced. No further items proposed for discussion and meeting adjourned.



16-BIT VICE NOTES

Tom Shoosmith - JACG

I'd like to first start off by thanking you for placing your confidence in me and electing me your first 16-Bit Vice President. I hope to make this a very productive year. In the coming months I'm hoping to provide you with (via this column) rumors, news, mini reviews, show dates and generally what's happening in the ST world, but your help is desperately needed for 16-bit development and growth within the club.

Last months demos were very good, and I'd like to thank Charles Miller and Eric Jacoves for their excellent ST presentations. I'm hoping to see more demos in the future from our ST members. I'm sure there are members out there that would be more than happy to do a demo. Please, if you want to do a demo, feel free to let me know. You can call me at home in the evening at 388-5952, leave me Email on our BBS(I log on everyday),an Easyplex on Compuserve (#72717,737) or if necessary, during the day at work 457-4887.

Our amount of BBS users is growing by leaps and bounds. Although at this point were dealing with limited space, we have just recently opened the U/L and D/L areas. If you haven't called the board yet give it a call at 298-0161. There are some ST downloads there. I recently uploaded a public domain desk accessory, Deskman by Michtron. It's a pretty decent multi function desk accessory. I also recently uploaded Strtgem2.arc, A member at the last meeting asked me about putting a gem program in an autoboot folder, and the problems encountered with the initialization of gem. Well, I'm told that this program will do it and has docs inside. Please feel free to download these. We welcome uploads, if your unsure whether our ST library has it or not - upload it anyway, or give a copy to Charles Miller. The library is always looking for additions from the members.

Mini Reviews - Two of my favorite utilities for the ST are Undelete, a program available in our ST library. Undelete is a very easy program to use to recover a deleted file. If you have written to the disk after deleting, chances are recovery will be impossible, but if you haven't you should be able to recover that deleted file.

Another favorite utility of mine is Disk Doctor by Antic. This program has many features but perhaps the best is its sector editor. Its relatively easy to use and not very expensive.

On the game side, Megaroids is perhaps the best Asteroids look alike around and its public domain! If you don't have it, I recommend getting it. You can find it on

our BBS or from our ST Library.

Upcoming show dates - May 16, South Jersey Micro Show & Sale, Betsy Ross Inn (Rt. 130), Pennsauken, NJ, 10 to 4. June 6, North Jersey Micro Sale & Show, Meadowlands Hilton, Secaucus, NJ, 9 to 4.

Thought for the month: when Atari releases their new PC, will this represent another potential JACG sig?

If your a frequent caller of other BBS's, post our BBS telephone number and let em know about the JACG. Were all recruiters!

JACG MEETING THROUGH THE EYES OF A NOVICE

NANCY AMBRUSIO - JACG

If you count heads at any monthly Atari computer meeting, you will see more men than women. That is no accident. Men, on the average, are more interested in gadgets than are the more practical women. Thus when I was approached about attending a JACG meeting, I had certain reservations about going. I'm a novice in the world of computers and wasn't sure I ever wanted to own one.

I rationalized to myself, "My thinking is NOT at all LOGICAL.... Computing takes super ORGANIZATIONAL skills.... You have to be a fanatic about NUMBERS...." and on and on. I had heard these negative thoughts, and now they were my own. I was reluctant.

On the other hand (I convinced myself) such a meeting might be beneficial. I could become familiar with a machine that just might solve some of my chronic maladies, such as unbalanced checkbook, misplaced recipes and an unworkable typewriter.

I ventured into the lobby of the Bell Labs auditorium in Murray Hill one Saturday morning at 9:30 A.M. Perfect timing! Someone had told me not to go too early, or I might become bored (more negative thoughts). The mass of humanity suprised me. I listened and learned a lot. "16K....128k...1 megabyte...hard drive." As I maneuvered through the crowd, it occurred to me that I could use a minicourse in Greek. But, not to worry, I recognized some English mixed in there. I proceeded to look over the software, amazed at the amount and variety. Everyone was pleasant and helpful, and they even seemed anxious to share information.

As the crowd filed into the auditorium, I staked out a seat. That was when the real fun began. I am an artist of sorts - teaching is only a hobby. The demonstration of a graphics arts disk was particularly interesting to me. I watched in awe as the various patterns and colors appeared and disappeared. The visual presentations captured my attention for an extended period of time. A whimsical musical disk was also very entertaining.

So this computer word IS as exciting after all as the computer lovers would have us believe. It was at this point that my defenses crumbled. I concluded that a computer would be an asset to my life. And I decided to learn more.

As you can see, the JACB meeting opened up a whole new world of interesting people, concepts and machinery. It reversed my erroneous ideas about computers. I am now embarking upon a new project I call "computer dating." This is not what you would expect. It simply means that the computer, if I can program it with the right information, will become an ideal companion - quiet, agreeable and cooperative. (Only Kidding.)

My thanks to all of you for an informative experience that also turned out to be fun. Bye the bye, does anyone have an inexpensive Atari system for sale? (Not kidding.) Call 201-379-3333.

DATE OF EASTER

Kenneth J. Pietrucha - JACB

Nearly every religion has at least one feast or holiday tied to the movement of the moon through the heavens. The Christian feast of Easter is usually celebrated on the first Sunday after the fourteenth day after the first new moon after March twenty-first. Having met all of the the above conditions, the earliest that Easter can be celebrated is on March twenty-second. The last time that Easter fell on March twenty-second was in 1818 and the next time will be in 2285.

On the other extreme, the latest possible date for Easter is on April twenty-fifth as was celebrated in 1943. The next time Easter will be observed on April twenty-fifth will be in the year 2038.

Verification of these dates, or the calculation of Easter for any year in the Gregorian Calendar (since 1583) is possible with the short program I have provided. The program is based on a procedure devised in 1876 which first appeared in "Butcher's Ecclesiastical Calendar". Both references cited at the end of this article have similar procedures and both give credit to Butcher. ►

```

5 REM DATE OF EASTER
6 REM KENNETH J. PIETRUCHA ***
  J.A.C.B.
7 REM 3-11-87
10 GRAPHICS 0
20 ? "ENTER THE YEAR ";:INPUT Y
25 A=INT(Y/19):A=Y-(19*A)
30 B=INT(Y/100):C=Y-(100*B)
35 D=INT(B/4):E=B-(D*4)
40 F=INT((B+E)/25)
45 G=INT((B-F+1)/3)
50 T=(19*A)+B-D-G+15:
  U=INT(T/30):H=T-(U*30)
55 I=INT(C/4):K=C-(4*I)
60 S=32+(2*E)+(2*I)-H-K
62 W=INT(S/7):L=S-(W*7)
65 M=INT((A+(11*I)+(22*L))/451)
70 V=M-L-(7*M)+114:N=INT(V/31)
75 P=V-(31*N):P=P+1
80 PRINT "IN THE YEAR ";Y
85 PRINT "EASTER IS ON DAY ";
  P;" OF MONTH ";N

```

The calculation of Easter is relatively simple compared to other happenings. The Chinese New Year, for instance, is based on the moon and the sun. It always begins on the day of the first new moon after the sun enters the constellation Aquarius.

The only holiday I have found which is impossible to program on a computer is Ramadan, the Islamic month of fasting and prayer. It begins with the first naked eye sighting by two different people, of a waxing crescent moon, following the occurrence of the ninth new moon of the Islamic lunar year.

The references I used for this article are Astronomical Formulae for Calculators by Jean Meeus and Practical Astronomy With Your Calculator by Peter Duffett-Smith.

Have a Happy Easter !

***** CeBIT 1987 *****
 *** A special report ***

Michael Schuetz - A.U.C. Brainwave

Hannover, West Germany, March 4th, 1987. The CeBit, Europe's biggest Computer show, opens. Everybody who has a name in computer business is here. Apple presents their DM 20.000,-- computer Aladin, Commodore presents in a "world premier" their newest PC 40 and the two new Amigas 500 & 2000.

But one of the most crowded booths is the huge Atari booth, again. There Atari presents all the things which had been shown in Chicago earlier this year. ► 14

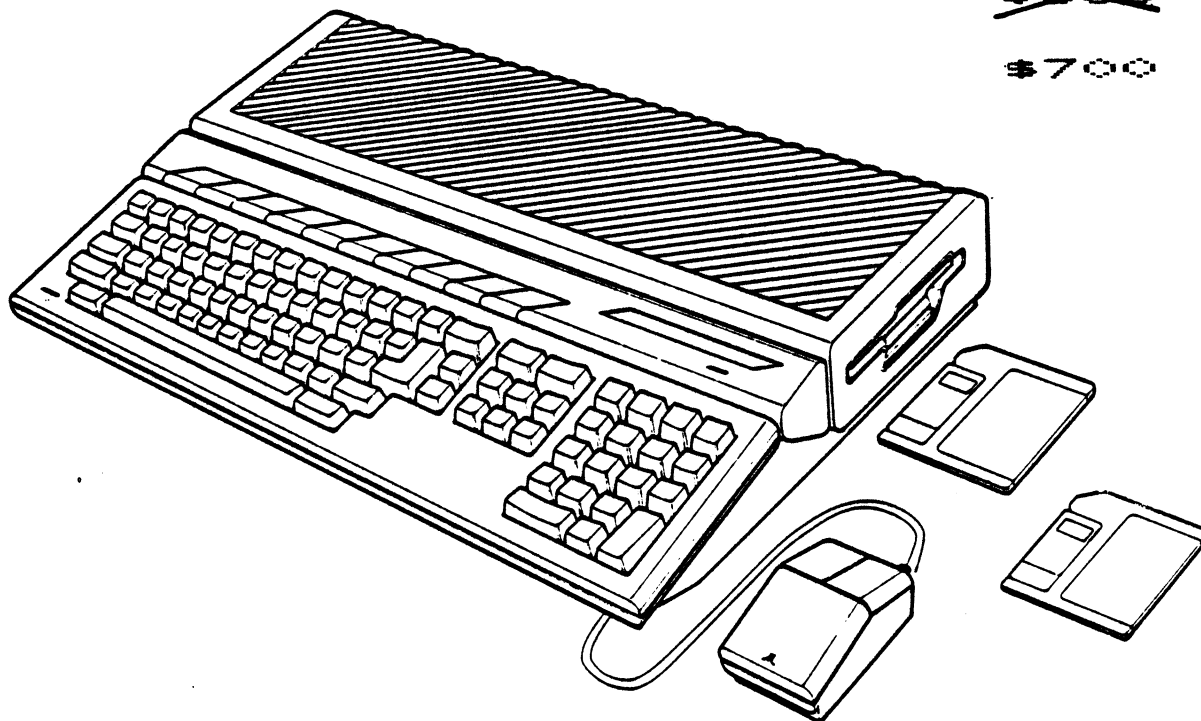
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 - 640 x 200 x 4 colors.
 - 320 x 200 x 16 colors.

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- Industry standard parallel interface port.
- RS232C serial modem port.
- Floppy disk port (including controller) for 2nd disk drive.
- Hard disk port.
- ROM cartridge port.
- Mouse and joystick ports.

TECHNICAL DATA:

- MC68000 microprocessor; 32-bit internal, 16-bit external architecture.
- Clock speed 8 MHz.

REQUIREMENTS:

ATARI RGB or Monochrome Monitor.

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In one corner two Atari PC's, one with a color the other with a monochrome monitor. At another corner you could take a closer look at the new Mega STs with either one, two or four Megabytes. These consist of two components (three with monitor) namely a separate professional cherry keyboard (at last!!!) and a huge case, which fits directly under a monitor. This contains the Mega STs mother board, power supply and a double sided disk drive (3 1/2").

Although the two Mega STs shown in Hannover did not already have the new Blitter Chip inside, an Atari official said, that when the Megas will hit the shelves in the middle of 1987, all would contain this chip as standard. He also told us that there will be Blitter upgrade kits available for all existing ST models on the market. Another feature of the new Megas is a battery-buffered clock. So, no more clock setting after power-up. These STs will keep the exact time even when turned off. On the back of the case there are all necessary connections already known from the old ST's plus one for the keyboard. The prices for the new Megas are as follows:

Mega ST 1 around DM 2.500,--
Mega ST 2 around DM 3.000,--
Mega ST 4 around DM 4.000,--
Atari PC around DM 1.800,--

Atari also presented a new 20 Megabyte hard disk (SH205) which sits in a similar casing as the Mega's mother board, being also a nice place to put your monitor!

Also shown was Atari's first laser printer, the SLM. The Atari Laser Printer is different (oh really ?) from other laser printers. Usually these have their own processor (mostly a 68000 - what a coincidence!!), a lot of RAM and some font cartridges. Well, Atari uses the power of their STs instead. The printer will be totally controlled by the ST computer. Since this uses up a lot of

RAM the best ST'S to run this printer are the ST 2 and the ST 4. The printer usually needs around 1 Megabyte of RAM, that's why you are better off with a two or four Mega system.

One advantage of the combination ST & laser printer is the speed. If you use a normal Laser printer on the ST, it usually takes 8 minutes to print a page. With the Atari printer and a non-Blitter ST this time will be cut down to 30 seconds while with a Blitter ST it'll only take 10 seconds !!!

The SLM also does not have any cartridges, it'll print whatever font you are able to create with your ST. The printing resolution is 300 dots per inch. A single SLM costs around DM 3.000,--, compared with a Mega ST2 all costs DM 6.000,--.

Hidden in another corner, Atari also showed off two 130 XEs running some old demos (Fuji Boink & Atari Pop demo).

The only new thing Atari had to offer here was the XEP 80 column card, which plugs into the joystick port. But no word when it would be available and at which price.

So much about new hardware. Atari again had invited some European software vendors to show their products at the booth. GfA demoed their already wide-spread GfA basic with the compiler and their newest products: GfA draft & GfA Vector. Also to be seen were the new 1st word+, Publishing Partner, MProlog and the Graphic Artist.

On one of the walls of the booth you could also take a look at the boards of the Mega ST and the Atari PC. On the Mega board the place of the Blitter was already filled. An Atari official also told us that the new Blitter TOS will give you the option to be able to turn the Blitter on and off, just in case you have some software that won't run with it.

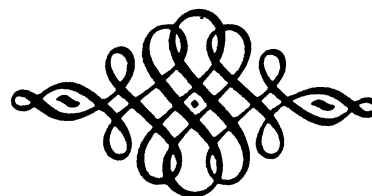
Through the pamphlets available at their booth, Atari also revealed some new figures for the past year. In the first half Atari sold 26,000 STs in Germany. These are as much as IBM has sold compatibles in the same period of time. And during the whole year of 1986 Atari Germany sold 73.426 ST computers. In 1986 Atari Germany earned a total of 145 Million DM compared to 62 million DM of 1985. These figures drastically show the success and the blossoming of Atari in Germany after the presentation of the ST in 1985.

But Atari is becoming more and more present in other European countries, too. Atari has, for example, now also opened branches in Sweden and Spain. The interesting thing about Atari Sweden is that their Chief, Lars Moland, and some of his team members are former members of Commodore Sweden. Again Tramiel got back some of the men whom he knew from his days at his old company.

Surprisingly, Atari also sells Computers to Eastern European countries like the CSSR and Jugoslavia. In October and December alone, Atari sold 10.000 130 XEs and 800 XLS in the CSSR.

All in all, an impressive appearance in Hannover; but Atari also left some questions unanswered. Will there ever be a TT ? And if yes, when will it be marketed ? Will there be a long rumored hardware emulator for MS DOS after the presentation of the PC ? What about future 8-bit support ??

Well, we'll have to wait and see.



This month will feature as "Disks of the Month", Advanced Music Systems (AMS) with your choice of 3 full 2 sided disks. Doug Van Hook, our new 8-bit Vice President, will use an AMS public domain player (these appear on each disk) for your pleasure, (and the Advanced Music Systems copyrighted program [anyone know of a PD pgm?]) to demonstrate how simple it is to compose music. As a complete novice he will need your help to answer questions.

The 8-bit Library has now doubled to over 200 disk-sides thanks to our on-going complete library exchange with Jim Chapman, Disk Librarian of S&P&A&C&E of Tacoma, Wa., and on-going disk submissions. We are now sending our 16-bit to them and awaiting theirs. We thus begin what is hoped to be the best Shot-In-The-Arm for all ATARI Clubs, a very complete, active library. Atari needs all the help it can get!

The deal involves complete exchange with disk difference made-up by blank disks--NO MONEY. Other clubs have and will be contacted on the same basis. Obviously there will be duplication since filenames have no ancestry. Likewise, there will be library problems such as bad disks and poor or no docs., etc. However, with your help I forsee by the end of 1987 a very active library and club; also, an excellent treasury. One real need for the library is disk boxes. The kind that encloses disks when you purchase 10. HELP!!!

Because our 16-bit library is new and weak (>50 disks) we need much more active participation by our 16-bit members. Last month Linda Peckham, who was a 16-bit VP candidate, supplied 16 disks which will be available soon. Thanks loads Linda!

Wonders never cease--MAXELL Corp of America announces 5.25" floppy with 100-Mbyte capacity, or 100 kbpi. Expect drive to cost between flexible and hard disk. Of course NOT Atari. We can hope.

Finally, we continue an over 4 year policy of giving a free library choice (8 or 16-bit) for a 3/4 full disk of new files.

NB. The JACS Disk Menu must be run utilizing DOS 2.0 with BASIC.



This is a new column in which I'll review every-now-and-then a good piece of "gameware" or two for the ST. This month I'll focus my report on "Deep Space", a new program from the English Softwarehouse Psygnosis, well known for "Brattacas", one of the first good games for the ST. Besides the two program disks the game package also contains a mission manual, a small comic booklet, a Psygnosis button, a loading-instruction sheet and the (for Psygnosis) usual small futuristic poster.

In Deep Space you take charge of a Strix fighter. You work for the "Agency" as unscrupulous adventurer, earning credits by shooting down ships from the evil Vexon empire. Your main goal is to penetrate into the Vexon Star System and to destroy the huge Vexon mother ship. But you'll have to surpass many obstacles before getting a glimpse of that legendary wonder of Vexon technology.

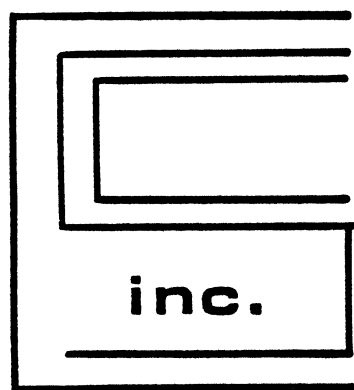
On your way you have to pass through four different Star systems:

- The Al-Nair System (your home System),
- The Giobek System,
- The Kogon System, and
- The Inogal System.

Other obstacles than the Vexon Ships are single meteors, whole meteor storms and mine fields. You also can gain extra points for picking up pilots of the shot down ships and for the Capturing of enemy satellites which often surround enemy planets. The graphics are excellent, no vector graphics as in similar games like "Starglider", but full colored enemy ships.

The ships controls might look a little difficult at first sight but you soon get accustomed to'em. The programmers have given you many options to control your Strix fighter. You can choose between the mouse, the joystick or the keyboard, but I found out that a symbioses of all three is the best. To direct the "steering wheel" I use the joystick. To handle the ships computer and the short range scanners I use the mouse and to in- or decrease speed I use the keyboard (Shift- & Return keys).

When you boot the first disk, after the intro screen a great picture appears showing you boarding your Strix Fighter. You then are prompted to insert the second disk. And then after a short second booting you leave the Home Gate and enter the Al-Nair system. You know look outside the front window of your Strix fighter with a very detailed control panel in front of you. On the lower left side of the screen there is the Ship's computer, in the middle there is the centre console for positional and speed control. Next to it is the functions pod with its

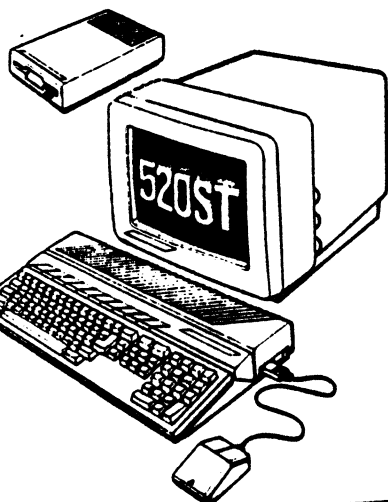
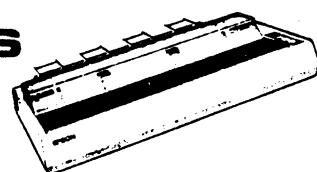


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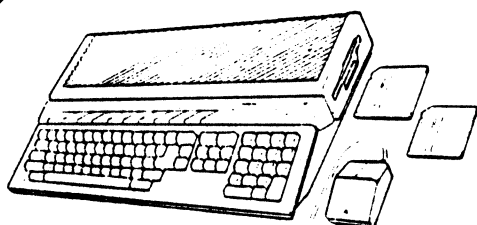
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switches while in the right corner the short range scanners are placed. And on the upper part there is the mission clock showing the already elapsed time and the Status Display always showing the current alert messages and status reports, with a permanent energy readout below.

The ship computer has six function buttons except the on/off switch. When turned on a small screen materializes above it, giving the information requested. You can view a two-piece long range map which show with your ship in the center from to different view points what's happening around you. Each sort of objects has its own color on this maps (drones = green dots, star gates = shimmering dots, planets = pale blue dots, etc.). Pressing the second button of the top row gives you an image of your Strix fighter in the centre. This option activates the auto-scoops. If you for example have to pick up an energy drone then you have to manage to get it inside the white box on this screen which marks your cargo bay. This screen is also very useful when in combat or when flying through a meteor or mine field, because all objects in front of you are registered clearly. Next to this button is another sort of navigation help. At the long range map you have the possibility to put a mark on a place you want to go. At this screen here you'll see how far away you are right now from this selected point and how much energy it will take you to get there. The first button on the lower left is the order menu. Here you can order energy-, repair- or quark (weapon that is supposed to be able to destroy the mothership) drones. But only if you can afford it ! This drones are then dispatched and send to the location from where you ordered them. The button nearby activates another message on which the messages of the upper screen are displayed in much more detail. And the last button at the ships computer gives you a status report of your ship's condition (in percent).

Now on to the function pad, here you can activate the shields, select your weapons change your vision direction and there also is one button that stops your ship instantly through retro-thrust (a very energy consuming move). But you can also detach the viewing window from the direction of motion, an option which might come in handy when you want to shoot down Vexons that try to sneak up on you from behind. The short range scanners are activated by clicking on the arrow on the right corner. The scanner screen will then be scrolled up in the right corner and you know can select between five distances. Another very vital option when in combat.

Well, so much about the controls. To travel from one Star system to the other you have to fly through the star gates, located in each of the systems. Another very important feature of the game is the possibility to save your game. Just figure this out: You have battled your way through the four star systems, have just jumped through a Stargate into the Vexon sector after hours of play and BOOM!, you collide with a stupid Vexon Scout. The game is over and you'd have to start all over again, but no!! You ►

were smart and saved your game a short while ago. This option makes playing Deep Space really very enjoyable, because while in combat only a slight lack of concentration might terminate the game. While in the beginning my games often used to end due to running out of energy, they now mostly end because I bump into one of the enemy ships I failed to shoot down a second ago.

OK, I admit it the game also has some flaws. The sound is not extra ordinary and can easily be combined to 8-bit standards and every-now-and-then a piece of debris might get stuck on the screen, that only disappears when another object passes that area. But hey, I still rate Deep Space as one of the best games for the ST right now. I especially prefer it to "Starglider". OK, that game has digitized sound but I hate to bust my mouse while trying to shoot down some weird alien ship that looks like a paper-bird.

Here now a hint or two for you fellow Deep Space nuts or nuts to be: First shoot down some aliens in the vicinity in order to get some credits. Then order as much energy drones as possible and try to never let your energy drop under 100.000 (except at the beginning, naturally). I usually keep it around 200.000 at least.

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- <*) Computer Show Schedule
- <*) Updated 1088XE Documentaion
- <*) Zmag Newswire
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All this and more in Issue 45

WordFind in Pascal

Charles P. Lichtenwalner - JACB

The following program WORDFIND has been written in KYAN Pascal to generate arrays of letters with words embedded in them.

The interface to the program is based on a BASIC program from the January 1984 ANTIC. WORDFIND will ask for a file of words to fit into the array. If no file exists, type in "NEW" at which point WORDFIND will ask for the filename. Type in the words one at a time with a carriage return at the end of each word. Typing "END" will tell WORDFIND that all the words have been entered. The next prompt is for the size of the array. I recommend something between a 10x10 array and a 30x30 array. WORDFIND will then try to place the words it reads off the file. As I intended the program primarily for elementary age children, all the words run left to right and/or top to bottom. Each time WORDFIND tries another location or orientation (chosen at random) it prints a period on the screen. After placing all the words from the file in the array, the program prompts for a title for the puzzle (15 characters). WORDFIND then prints a "cheat sheet" of all the words in the array with unused spaces filled with a "*". Finally, the true WordFind puzzle is printed with the unused spaces filled with random letters, and a list of the words used is printed at the bottom.

The puzzle array is printed as double width characters. The control code in the WRITE (printer,chr(14)) may have to be changed if your printer's control code is not the same as a BMC 80 printer.

Each week I print out a WordFind puzzle of my children's spelling lists. Their teachers like the extra exposure to the spelling words this gives the students, and the kids seem to enjoy solving the puzzle.

If anyone needs a runnable version of this program, please let me know.

```
PROGRAM WORDFIND;
(* BY C. P. LICHTENWALNER DEC 1986
AFTER A BASIC PROGRAM IN ANTIC JAN 1984
IN PASCAL "Copyright 1986 by Kyan Software, Inc."
*)
```

```
CONST
  MAXSTRING=15;
TYPE
  PUZZLETYP=ARRAY[1..30,1..30] OF CHAR;
  STRING = ARRAY[1..maxstring] OF CHAR;
  FILENAME = ARRAY[1..17] OF CHAR;
```

```
VAR
  PUZZLE : PUZZLETYP;
  WRDLST : ARRAY[1..50] OF STRING;
  TTL,WORD : STRING;
  WORDFILENAME:FILENAME;
  WORDFILE,PRINTER:TEXT;
  PSZ : INTEGER;
  I,J,WORDCNT:INTEGER;
  RANDOMPTR:^CHAR;
```

```
FUNCTION LENGTH(VAR A1:STRING):INTEGER;
```

```
VAR
  I:INTEGER;
BEGIN
  I:=MAXSTRING;
  WHILE ((A1[I]=' ') AND (I>1))
    DO I:=I-1;
  LENGTH:=I;
END;
```

```
FUNCTION RAND256:INTEGER;
BEGIN
  RAND256:=ORD(RANDOMPTR^);
END;
```

```
FUNCTION FITIT(WRD:STRING; WRDCNT:INTEGER) : BOOLEAN;
VAR
  I,X,X1,X2,Y,Y1,Y2:INTEGER;
  FITTRUE:BOOLEAN;
```

```
FUNCTION FIT(X,X1,Y,Y1:INTEGER;WRD:STRING):BOOLEAN;
VAR
  I,X2,Y2:INTEGER;
  INBOUNDS,FITS : BOOLEAN;
BEGIN
  I:=0;
  fits:=true;
  repeat
    i:=i+1;
    X2:=X+X1*I; Y2:=Y+Y1*I;
    INBOUNDS:=(X2 > 0) AND (Y2 > 0) AND (X2 <= PSZ) AND (Y2
    <= PSZ);
    IF INBOUNDS THEN
      FITS:=fits and (PUZZLE[X2,Y2]='*') OR
      (PUZZLE[X2,Y2]=WORD[I])
    ELSE
      FITS:=FALSE;
  until ((not fits) or (I>LENGTH(WORD)));
  write('.');
  fit:=fits;
END;
```

```
BEGIN
  I:=0;
  REPEAT
    I:=I+1;
    X:=1 + RAND256 MOD PSZ;
    Y:=1 + RAND256 MOD PSZ;
  REPEAT
```

```

Y1:=RAND256 MOD 2;
X1:=(RAND256 MOD 3) -1;
UNTIL NOT(((X1=0) AND (Y1=0)) OR ((X1=-1) AND
(Y1=0)));
FITTRUE:=FIT(X,X1,Y,Y1,WRD);
IF (I MOD 200)=0 THEN WRITELN;
UNTIL FITTRUE OR (I>((WRDCNT+1)*25+10));
IF FITTRUE THEN BEGIN
FITIT:=TRUE;
writeln;
FOR I:=1 TO LENGTH(WRD) DO BEGIN
X2:=X+X1*I; Y2:=Y+Y1*I;
PUZZLE[X2,Y2]:=WRD[I];
END;
END
ELSE BEGIN
FITIT:=FALSE;
WRITELN;
WRITELN('*** ',WRD:LENGTH(WRD),' DOESNT FIT');
END
END;

```

PROCEDURE PRINTOUT;

```

VAR
I,J,SPACES:INTEGER;
SPACESTR:ARRAY[1..80] OF CHAR;
BEGIN
REWRITE(PRINTER,'P:');
WRITELN(PRINTER,CHR(12)); ($FORMFEED$)
WRITELN(printer);WRITELN(printer);
SPACES:=trunc((80-LENGTH(TTL))/2);
FOR I:=1 TO 80 DO
SPACESTR[I]:=' ';
WRITE(printer,SPACESTR:SPACES);
SPACES:=LENGTH(TTL);
WRITELN(printer,TTL:SPACES);
WRITELN(printer);WRITELN(printer);
SPACES:=trunc((80-2*PSZ)/2);
FOR I:=1 TO PSZ DO BEGIN
WRITE(printer,SPACESTR:SPACES);
write(printer,chr(14)); ($DOUBLE WIDTH CHARACTERS$)
FOR J:=1 TO PSZ DO
WRITE(printer,PUZZLE[I,J]);
WRITELN(printer);
END;
WRITELN(printer);WRITELN(printer);
FOR I:=1 TO WORDCNT DO BEGIN
IF ((I MOD 4)=0) THEN
WRITELN(printer,WRDLST[I]:19)
ELSE
WRITE(printer,WRDLST[I]:19)
END;
WRITELN(printer);
END;

```

PROCEDURE GETINPUT;

```

VAR
ANS:FILENAME;
WORD:STRING;

```

```

I,len,NUMWORD:INTEGER;
BEGIN
WRITELN('          WORDFIND IN PASCAL');
WRITELN;
NUMWORD:=0;
WRITELN(' INPUT WORDS FILENAME');
WRITELN(' OR "NEW" TO CREATE A NEW WORDS FILE >');
READLN(ANS);
IF ((ANS[1]='N') AND (ANS[2]='E') AND (ANS[3]='W')) THEN
BEGIN
WRITE('FILENAME TO PUT WORDS ON >'); READLN(ANS);
REWRITE(WORDFILE,ANS);
WRITELN('ENTER WORDS THEN "END"');
writeln('when finished. ');
NUMWORD:=1;
WRITE('WORD # ',NUMWORD:2);
READLN(WORD);
REPEAT
len:=length(word);
WRITELN(WORDFILE,WORD:len);
NUMWORD:=NUMWORD+1;
WRITE('WORD # ',NUMWORD:2);
READLN(WORD);
UNTIL ((WORD[1]='E') AND (WORD[2]='N') AND
(WORD[3]='D'));
END
ELSE
wordfilename:=ans;
WRITE('PUZZLE SIZE (10-30) >');
READLN(PSZ);
END;

BEGIN
RANDOMPTR:=POINTER(-11766);
GETINPUT;
RESET(WORDFILE,WORDFILENAME);
FOR I:=1 TO PSZ DO BEGIN
FOR J:=1 TO PSZ DO
PUZZLE[I,J]:='X'
END;
WORDCNT:=0;
WHILE NOT EOF(WORDFILE) DO BEGIN
READLN(WORDFILE,WORD);
WRITELN(WORD:LENGTH(WORD));
IF FITIT(WORD,WORDCNT) THEN BEGIN
WORDCNT:=WORDCNT+1;
WRDLST[WORDCNT]:=WORD;
END;
END;
WRITE('TITLE FOR PUZZLE >');
READLN(TTL);
PRINTOUT;
for i:=1 to psz do begin
for j:=1 to psz do
if puzzle[i,j]='X' then
puzzle[i,j]:=chr((rand256 mod 26)+ord('A'));
end;
printout
END.

```


Overnight Picnic

Donald Forbes - JACB

Hunched over the Atari all winter? Need some sunlight and fresh air? The instant remedy is an overnight picnic.

If you have never been on an overnight picnic, here is how you get started.

There are four essential requirements:

- (1) You must stay DRY
- (2) You must keep WARM
- (3) You must get enough SLEEP
- (4) You must get enough to EAT

Before anything else, you must do some planning and preparation. One of the principal considerations is to arrange the outing so that you do not have to spend any more money than necessary.

First you need a place to stay. Where? The logical answer: a commercial campground. And where do you find a commercial campground? You pick up the phone book and under CAMPERS - DEALERS or TRAILERS - CAMPING AND TRAVEL look for a nearby dealer who will have brochures and other literature on campgrounds in the vicinity. For example, my nearest dealer is CAMPER - TRAILER USA on 104 Ridgedale Ave in Morristown 539-5800.

An alternative is to call the phone company and ask for a free copy of the Sussex County telephone directory, and then phone some of the many commercial campgrounds in the hills of northern New Jersey and ask for a brochure by mail.

Once you have made a choice, the next consideration is to STAY DRY. The simple solution is a pick a weekend for your outing where there is no chance of rain; if rain threatens one weekend, postpone the picnic until the next.

Keeping WARM is the next challenge. You obviously need some shelter.

If you have access to a station wagon, fine. If not, consider a tent. If you can borrow a tent, fine. If not, look in the phone book for someone who has camping equipment for rent. You can also improvise a tent with two large plastic ground cloths (12 x 12 feet) by laying one on the ground and stringing the other on a rope stretched between two poles held, in each case, by two guy wires staked into the ground. Be sure to test the arrangement in your back yard before you commit yourself.

Remember that the nights get cold after sundown, especially in higher and windier locations. So bring plenty of warm underwear, a Navy stocking cap and some warm socks for everyone. Most of your body heat is lost through the head (the body defense mechanisms strive to keep the head warm at all costs). As the old saying goes: If your feet are cold, put on a hat. Bring more warm clothing that you and your party will need (and you will not be sorry).

You will get a good night's sleep only if you are warm and dry and comfortable. Round up all the old blankets in the house, buy some oversize safety pins, and convert the blankets into sleeping bags. You also need something soft to sleep on. If you are sleeping in a station wagon, you can buy a three-inch-thick foam pad in a furniture store that will serve as a mattress. In a tent, you can use a cot or improvise one from a collapsible aluminum and plastic lounge chair you can buy in the grocery store for about seven dollars.

Do not attempt to sleep on the ground without padding. Your hip bone will dig into the ground and keep you tossing and turning, and a hole for your hip bone will work only if you are accustomed to it. Small children can sleep on the ground with minimal padding, but not adults. You will need a flashlight for whoever decides on a midnight trip to the washroom (unless you have a old peanut jar with a lid).

If you are on an overnight picnic, then food is no problem. You can buy a foam plastic cooler in the grocery store for two dollars. You can go without hot food for twentyfour hours. The campground store will provide you with food and ice and soft drinks. If you have a thermos bottle, fill it with hot coffee for the morning. If you bring instant coffee, you can make a cup from the hot water in the campground washroom.

Your preparations should include some emergency planning. Make two duplicate sets of your house and car keys, and leave all your other keys at home. Buy a key chain and strap one set to your belt. Take one piece of identification with you, and leave all the rest behind. If you lose anything, you are then faced with a simple nuisance and not a crisis. Bring an extra can opener and bottle opener.

Leave your axe at home (a dangerous tool) and the heavy hiking boots -- sneakers (including backup pairs) are all one needs. Pack some plastic bandages, some burn ointment and some aspirin. In 20 years of camping I have yet to see a snake, but if you have a favorite snake-bite remedy, bring it along. Also pack a box of large leaf or garbage bags (which can serve as clothing bags or as ground cloths or raincoats, by cutting a neck hole in the bottom). Pack a box of matches in a pair of plastic bags to keep them dry. Pack a can of insect spray. Do not forget a roll of clothes line -- it will find many uses.

You are now set to embark on your overnight picnic with the members of your party. You are the wagon master and responsible for the warmth, dryness, sleep and feeding of your charges (resourceful but not foolhardy). You take no chances that could spoil the outing.

When you arrive at the campground, you will find that the owners will be glad to help you have an enjoyable stay. If you ask for an electrical hookup (\$1) and bring a long extension cord, you will be able to plug in a lamp and a frying pan.

If you did everything correctly, you should be able to return home the next day, rested, and without mishaps. Your planning and preparation will have paid off. Your party may want to repeat the outing. You are now on the way to becoming a camper instead of just an overnight picnicker.

As a regular, you will need some more sophisticated skills.

You must be prepared to cope with rainy weather. This means a large plastic poncho for everyone, kept in an emergency laundry bag. If you have a tent, you need a dining fly (an 8 by 8 foot sheet of plastic suspended above the picnic table by four aluminum poles supported by staked guy lines).

You also need several decks of old playing cards, and some empty peanut jars with candles to serve as hurricane lamps. You need a large plastic groundcloth under your tent, to divert the water, another groundcloth inside to keep the floor clean and dry, and perhaps a third one rigged over the tent to divert the driving rain. With these preparations your party can sit for hours at the picnic table playing cards by candlelight and listening to the rainfall. The rain will never faze you.

You can enjoy some comfort and save repeated dry cleanings of your sleeping bags if you line them with worn sheets pinned around the edges (the sheets can be run through the washer after each outing, and then repinned.) The clothing problem can be solved with individual suitcases (the cheap plastic zippered kind); when you return, dump the contents in the wash.

If you stick to the commercial campgrounds and use their water and electricity, food preparation is just a matter of packing some old kitchen appliances. If you decide to provide your own fuel, remember that canned propane will provide you with both heat and light in one fuel source.

Set aside one cloth bag as your 'library' to keep your Rand McNally road atlas and gas station maps and your 1500-page Trailer Life campground directory (29901 Agoura Road, Agoura Ca 91301), camping books, and local

promotional brochures, as well as 'Scenic Wonders of America' and 'America from the Road' from Reader's Digest.

For inexpensive detailed topographic maps of any part of the country, try the the Hammond Map Store (they also carry aviation maps) on 57 W 43rd St in NYC (212/398 - 1222) or write the U.S. Geological Survey, Washington DC 20242.

If you plan to explore the local area, you can be sure of clean washrooms nationwide by trying the KOA chain. You can get a directory of their 700 or so campgrounds by writing Kampgrounds Of America at PO Box 30162 in Billings Montana 59114.

Almost all campgrounds will accept reservations, but most of the time you don't need them unless you pick a busy holiday weekend. Sometimes you may be assigned to the overflow area, but rarely will you be turned away.

One of the main attractions of the outdoor life is the money you save: a party of four can stay overnight in a scenic location for something close to fifteen dollars. Another is the range of attractions at a reasonable distance: twelve hours of driving will take you to the Outer Banks of North Carolina, a fisherman's paradise with 100 miles of deserted ocean beaches. Eight hours driving northwards will take you to Montreal and its French language, customs and cuisine. Four hours will take you to the splendid isolation of the New Jersey Pine Barrens in the center of the state. The Chincoteague ponies are only eight hours away.

Just remember: keep warm, stay dry, have a good meal, and get plenty of sleep. You will be refreshed and ready to get back to your trusty Atari!

Software Engineering

Donald Forbes - JACG

Mathematics teaching, application and development are now ready, in my opinion, to be tackled as problems in software engineering.

So when I found on a library shelf a textbook entitled "Software Engineering" I scrutinized it carefully, and was rewarded with a number of penetrating insights.

Did you ever wonder why some of your purchased software works and some doesn't? Do you plan to write your own software? Do you ever expect to manage a software team? These extracts from the book may give you some useful clues.

►

The book (Prentice-Hall, 1979, 580 pages) is a labor of love by Randall Jensen and Charles Tonies, top people in the data processing systems lab of Hughes Aircraft Co. They cover the fundamentals, on which all the advances of recent years are based:

Software engineering uses sound engineering principles to create software that is economical, reliable and functional (it works on real machines).

How does software engineering differ from all other branches of engineering? Engineers since the beginning of time have dealt with visible and tangible material objects. Even electricity has characteristics that are visible and tangible. Software, on the other hand, is completely abstract: it is nonmaterial in every sense and can be better visualized as a process.

Because software is abstract, the most severe problem in software engineering is the problem of performance verification. The engineer must design software that, with limited testing, can be proved to work reliably.

What does a software engineer do? Engineers are basically problem solvers: practical pragmatists who tackle mundane problems and solve them efficiently and economically, often with a simple solution that is actually a masterpiece of inspiration and perseverance.

Engineers work with scientists, but you can always tell them apart, even though it may be difficult to tell where the scientist's contribution ends and the engineer's begins.

Engineers and scientists, however, have different goals. The scientist looks for new knowledge about the workings of our universe. The engineer puts the knowledge to work for the needs of mankind. Here is the reason that the universities have colleges of science as well as colleges of engineering. The scientist is trained in the scientific method; the engineer is schooled in the engineering design process.

Engineers (like physicians) existed long before there was any significant body of scientific knowledge. As the old joke goes: an applied mathematician finds the solution to every difficulty; the pure mathematician finds the difficulty to every solution. Engineers do not merely apply science -- they solve problems by using scientific knowledge when it is available. Neither an engineer nor a physician will walk away from a problem merely because science has not yet come up with a solution.

An engineer is a problem solver with three qualifications: basic knowledge, skills, and attitudes.

His knowledge comes from (1) the fundamentals of the physical sciences, (2) applied physical sciences (to bridge the gap between science and engineering design), and (3) empirical experience.

His skills comprise good judgment, ability to arrive at intelligent conclusions, mathematical and computational dexterity, the ability to use information resources, the ability to work (and communicate) with others, and the ability to think.

His attitudes include the ability to approach problems objectively, to make decisions based on logic without influence from tradition, outside pressure or bias, as well as curiosity and a questioning attitude.

The software engineer confronts a multitude of problems and must have the skills and knowledge to cope with all of them.

How does an engineer solve problems? He follows the six steps of the engineering design process: (1) formulate the problem, (2) analyze the problem, (3) search for possible solutions, (4) decide on a solution, (5) specify the chosen solution in detail, and (6) implement the working solution.

Idealistically, the process is represented as a series of six steps. But the truth is otherwise. Realistically, the six steps are actually the ends of six spokes on a wheel. The design process is actually the design cycle. Which leads to the old saying: "There is always enough time to do it right the first time." Good engineers are never fully satisfied with a design -- they always think they can do better. But economics keeps them in check.

At the outset, one of the best ways to study a problem is by the use of a "black box" with input and output quantities. The second step is to assign quantitative and qualitative characteristics to these inputs and outputs, and then, by "stepwise refinement," to break the problem into manageable pieces. The third step is to search for, and list, all feasible solutions, regardless of their apparent merit. The fourth step is to weigh the possible solutions and make a choice. The final steps are the specification of the model, followed by its implementation.

Software engineering, like other types of engineering, follows the same design process.

Management science is still in an adolescent stage, and software management science is still in its infancy. The moon shots and the space shuttle, however, have demonstrated that some progress has been made.

Every engineer is familiar with the concepts of energy and work. Every software engineer also needs to become fully familiar with the concept of entropy. In any engineering application, there is an input of energy which is subjected to a process which generates useful products. The output, however, never fully matches the input because

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the process also creates "entropy," another name for the disorder that is associated with every single physical process.

In the case of a grandfather clock, for example, you wind it once a day and the useful outputs are the position of the hands on the face and the ticking. The rest of the energy is dissipated as friction which generates heat in the mechanism and which, in turn, is dissipated into the atmosphere.

Entropy in nature involves: friction and resistance, heat loss, turbulence, as well as random motion and disorder.

Entropy in human affairs involves: uncooperativeness, incoherence, confusion, and undirected or misdirected action.

In other words, entropy is the energy that is dissipated during a process and is not available to contribute to the work.

How does the software engineer maintain control? He must: provide adequate resources; match task and resource structures; use structured design, programming, and test practices; establish comprehensive configuration control; maintain coherent communication among all project participants; and sustain effective management visibility and control.

So there you have the picture of the software engineer.

What does this have to do with the mathematical sciences? As Rudyard Kipling used to say: "That is another story."

Membership Renewal

Take a moment and look at your mailing label on a recent issue of the JACG newsletter. Check the bottom right hand corner following "Last Issue:". This is the month/year when your membership expires. Try to renew at least one month early. This helps us keep our book keeping in order and avoids your missing any issues of the newsletter.

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